

IN THE CLAIMS

Please amend the claims as follows:

1 (Canceled).

2 (Canceled).

3 (Currently Amended). A two-dimensional photonic crystal according to claim [[2]] 8, wherein the unit lattice is a tetragonal lattice.

4 (Previously Presented). A two-dimensional photonic crystal formed by a periodical two-dimensional arrangement of plural unit lattices, comprising:

a prism-shaped first dielectric area arranged at each lattice point of each unit lattice;

a prism-shaped second dielectric area arranged at an approximate center of each unit lattice; and

a third dielectric area adjacent to and around the first and second dielectric areas, wherein

the third dielectric area has a relative dielectric constant different from relative dielectric constants of the first and second dielectric areas,

the unit lattice is a tetragonal lattice, and

the first dielectric area and the second dielectric area have a substantially cylindrical shape and satisfy a relationship:

$$0.4a \leq r_1 + r_2 \leq 0.6a,$$

wherein  $r_1$  indicates a radius of the cylindrical first dielectric area,  $r_2$  indicates a radius of the cylindrical second dielectric area, and  $a$  indicates a unit length of a lattice axis of the tetragonal lattice.

5 (Currently Amended). A two-dimensional photonic crystal according to claim [[3]] 4, wherein a relative dielectric constant  $\epsilon_1$  of the first dielectric area is equal to a relative dielectric constant  $\epsilon_2$  of the second dielectric area.

6 (Previously Presented). A two-dimensional photonic crystal according to claim 3, wherein a relative dielectric constant  $\epsilon_1$  of the first dielectric area is smaller than a relative dielectric constant  $\epsilon_2$  of the second dielectric area.

7 (Currently Amended). A two-dimensional photonic crystal according to any one of claims ~~2 and~~ 4-6, wherein a relative dielectric constant  $\epsilon_3$  of the third dielectric area satisfies at least a relation  $\epsilon_3 > \epsilon_1$ .

8 (Currently Amended). ~~A two-dimensional photonic crystal according to claim 2,~~  
A two-dimensional photonic crystal formed by a periodical two-dimensional arrangement of plural unit lattices, comprising:  
a prism-shaped first dielectric area arranged at each lattice point of each unit lattice;  
a prism-shaped second dielectric area arranged at an approximate center of each unit lattice; and  
a third dielectric area adjacent to and around the first and second dielectric areas, the third dielectric area having a relative dielectric constant different from relative dielectric constants of the first and second dielectric areas,

wherein a relative dielectric constant  $\epsilon_1$  of the first dielectric area, a relative dielectric constant  $\epsilon_2$  of the second dielectric area, and a relative dielectric constant  $\epsilon_3$  of the third dielectric area satisfy relations:

$$\epsilon_3 > \epsilon_1, \text{ and } \epsilon_2/\epsilon_1 > 20.$$

9 (Currently Amended). A two-dimensional photonic crystal according to ~~any one of claims 2 and~~ claim 4, wherein the first and second dielectric areas are formed by air and the third dielectric area is formed by a dielectric material containing a ceramic material.

10 (Currently Amended). A two-dimensional photonic crystal according to any one of claims ~~2 and~~ 4-6, wherein the first and second dielectric areas are formed by a dielectric material containing a ceramic material and the third dielectric area is formed by air.

11 (Currently Amended). A two-dimensional photonic crystal according to any one of claims [[2,]] 4-6, and 8, wherein the first, second and third dielectric areas are formed by a dielectric material containing a ceramic material.

12 (Currently Amended). A two-dimensional photonic crystal according to any one of claims [[2,]] 4-6, and 8, wherein a unit length  $a$  of the lattice axis of the tetragonal lattice is different depending on a frequency of a light or an electromagnetic wave entering the two-dimensional photonic crystal.

13 (Currently Amended). A photonic crystal waveguide including a two-dimensional photonic crystal according to any one of claims [[2,]] 4-6, and 8, wherein a linear defect is formed in a periodical lattice arrangement of the two-dimensional photonic crystal.

14 (Currently Amended). A photonic crystal resonator including a two-dimensional photonic crystal according to any one of claims [[2,]] 4-6, and 8, wherein a point-shaped defect is formed in a periodical lattice arrangement of the two-dimensional photonic crystal.

15 (New). A two-dimensional photonic crystal formed by a periodical two-dimensional arrangement of plural unit lattices, comprising:

- a prism-shaped first dielectric area arranged at each lattice point of each unit lattice;
- a prism-shaped second dielectric area arranged at an approximate center of each unit lattice; and

- a third dielectric area adjacent to and around the first and second dielectric areas, the third dielectric area having a relative dielectric constant different from relative dielectric constants of the first and second dielectric areas,

wherein the first and second dielectric areas are formed by air and the third dielectric area is formed by a dielectric material containing a ceramic material

Claim 16 (New). A two-dimensional photonic crystal formed by a periodical two-dimensional arrangement of plural unit lattices, comprising:

- a prism-shaped first dielectric area arranged at each lattice point of each unit lattice;
- a prism-shaped second dielectric area arranged at an approximate center of each unit lattice; and

a third dielectric area adjacent to and around the first and second dielectric areas, the third dielectric area having a relative dielectric constant different from relative dielectric constants of the first and second dielectric areas,

wherein the first and second dielectric areas are formed by a dielectric material containing a ceramic material and the third dielectric area is formed by air.